New Hampshire

Strategic Highway Safety Plan

2008 Report Update

October 29, 2008
(Revised December 1, 2008)

A Collaborative Effort to Reduce Crashes
On New Hampshire Highways

Introduction Letter -

The Strategic Highway Safety Plan (SHSP) is an outgrowth of the reauthorization of federal highway funding (under SAFETEA-LU, 23 USC 148), with the purpose of clearly identifying the State's critical safety needs and developing strategies to achieve significant reductions in fatalities and serious injury crashes on all public roads. The current national rate of highway fatalities is 1.5 fatalities per 100 million vehicles miles traveled (MVMT). The rate of highway fatalities on New Hampshire's highway system was 1.13 per 100 MVMT in 2005. The US Department of Transportation (USDOT), which includes Federal Highway Administration (FHWA), Federal Motor Carrier Safety Administration (FMCSA) and National Highway Traffic Safety Administration (NHTSA), set a goal to reduce the national highway fatality rate to 1.0 fatality per 100 MVMT by 2011.

While New Hampshire's fatality rate is below the current national average, New Hampshire has seen an increase in crashes from 25,000 in 1993 to a level of 41,000 in 2005. Over the same period the State has experienced an average of 120 to 140 fatalities per year with the number of fatalities at 166 in 2005. The cost of highway crashes continues to be very high, costing the State's residents over one billion dollars per year (costs in calendar year 2000 per NHTSA) in lost wages, property damage, etc, not to mention the devastation it brings to families.

To make progress towards safer highways in New Hampshire, the Strategic Highway Safety Plan was developed in 2007 with input from federal and state agencies, local governments and private entities with an interest and a role in highway safety. They made recommendations on strategies, that if implemented could have a significant effect on reducing crashes and improving the safety of our highways.

This report is an update on the work that has occurred on the recommended strategies in 2008.

Mission, Vision, & Goal

Mission

The mission statement of the Strategic Highway Safety Plan (SHSP) provides direction for the development of the goal and the selection of strategies as well as the formulation of the action plans. The SHSP Stakeholders for this document developed the following mission statement:

Develop, promote and implement cost effective traffic safety strategies that save lives and reduce the number and severity of traffic crashes and injuries in New Hampshire.

Vision

The vision statement of the SHSP provides a desired characteristic or outcome when the goal is reached. The SHSP Stakeholders for this document developed the following vision statement:

Effectively and consistently achieve the safest travel on New Hampshire roadways where all roadway users act responsibly and arrive safely at their destination.

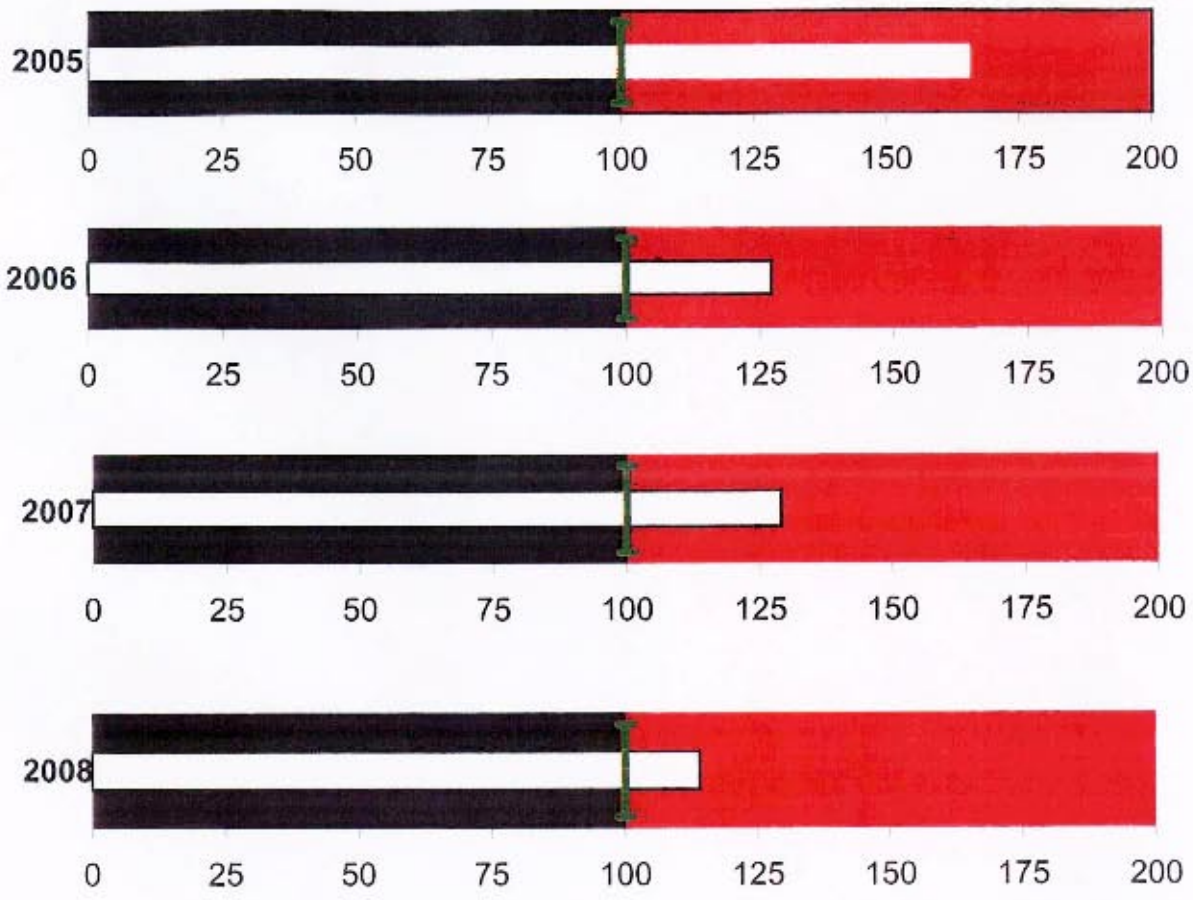
Goal

To make significant progress in achieving the mission and vision of the SHSP, the goal of the SHSP must be specific and expressed in terms of a reduction of crashes in a given time frame. As such the following is a target goal:

Reduce the number of fatalities/year on New Hampshire roadways to below 100 by 2010.

Dash Board Indicators

TOTAL FATAL CRASHES
Yearly Goal Less Than 100



2008 FATALS as of 10/24/2008 - DRAFT

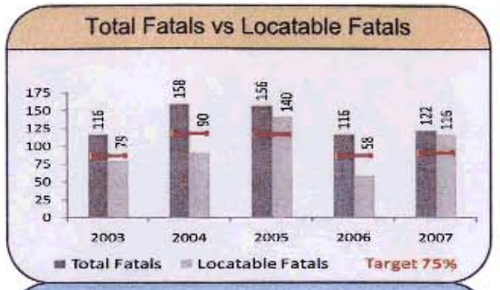
Functional Grouping of Strategies

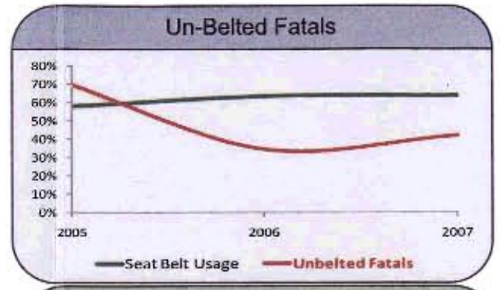
STRATEGIC HIGHWAY SAFETY PLAN

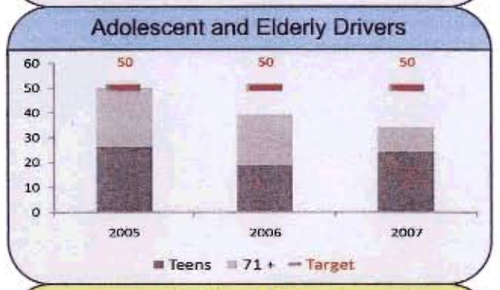
Safety Emphasis Areas

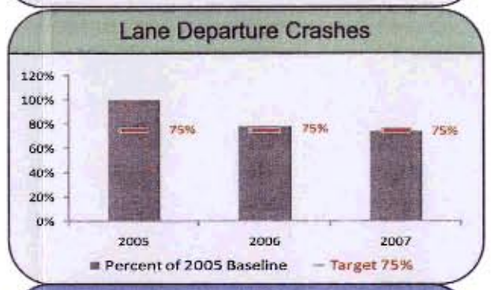
Emphasis	Strategic Objective	Measure	Target
Improving Crash Data	Improve Highway Safety Data and Traffic Records Systems.*	Increase the Number of Locatable Crashes. Completion of Other Tasks Listed Below.	Increase the Number of Locatable Crashes to 75%
Seat Belt Use	Increase Seat Belt Use Through Legislation, Education, and Enforcement	Number of Unbelted Fatalities and Percent Usage of Seat Belts	Decrease Non Belted Fatal Crashes Below 2005 Baseline. Increase Seat Belt Use to 83% by 2010.
Adolescent and Elderly Drivers	Decrease Adolescent and Elderly Fatalities. Enforcement, Education, Graduated Licensing, Medical Review...	Number of Adolescent and Elderly Fatals.	Decrease Adolescent and Elderly Fatals Below 2005 / Baseline
Lane Departure Crashes	Decrease Lane Departure Crashes. Rumble Strips, Roadside Hazards, and ITS Rural Applications.	Number of Run Off Road Fatalities	Decrease the Number of Run Off Road Crashes by 25% Relative to the 2005 Baseline.
Reckless Driving Behavior	Decrease the Incidents of Crashes Related to Reckless and Negligent Driving.	Number of Crashes Related to Reckless and Negligent Driving.	Decrease the Number of Highway Crashes that Result From Reckless and Negligent Driving by 25% by 2010.
Impaired Drivers	Eliminate Crashes Where Impaired Drivers are at Fault Through Education and Enforcement.	Number of Fatal Crashes Involving Impaired Drivers	Three Percent Decrease in Fatal Crashes Per Year for the Next 10 Years Based on the 2005 Level.
Special Users	Increase Safe Motorcycling, Bicycling, Walking, and Commercial Vehicle Operation, Including School Buses.	Number of Fatal Crashes Involving Special Users	Decrease in Crashes Involving Special Users
Emergency Medical Services	Reduce Fatalities by, Access to EMS, EMS Response, Post Crash Education, "Move Over Law"	Number of Fatal Crashes	Statewide Reduction in Fatalities

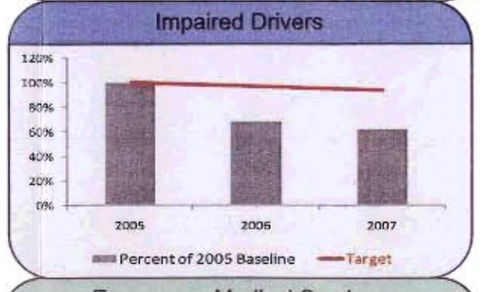
Measures

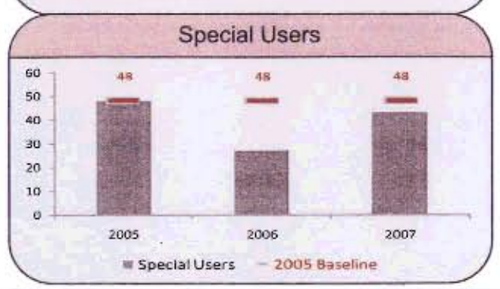


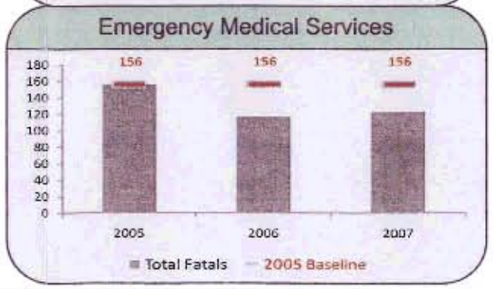












*Conduct Traffic Records Assessment, Develop and Implement Crash Record Management System, Link Crash and Medical Outcome Data Sets, Develop and Conduct Crash Data Collection Training, Develop a Traffic Record Data Warehouse, Provide Public Access to Known Crash Locations, Begin Analysis of Partial Data Sets

Strategies by Functional Area Group

Education/Outreach

- Pass a primary seat belt law
- Strengthen the roll of the legislatively appointed Medical Advisory Board
- Education of motorcyclist
- Education (Seat Belts) -support and expansion of existing educational programs involving wearing seat belts particularly for young drivers and pick-up truck drivers
- Increase public awareness (of problems of reckless driving behavior)
- Education (Impaired Drivers) – public announcements and education
- Education (Special Users) on bicycle and pedestrian safety
- Increase communities engaging in enforcement and education on adolescent seat belt use
- Utilize DHHS's link to older adult resources center to promote safe mobility choices
- Education (EMS) - of drivers on their responsibility after motor vehicle crash
- Education of EMS providers to prevent additional injuries at crash site - training to protect themselves and victims at crash scene
- Increase parental involvement in graduated drivers licensing and training
- Education (Special Users) of drivers operating around commercial vehicles
- Make advanced driving skills training and attitudinal courses available to all adolescents.
- Strengthen graduated drivers licensing law

Enforcement

- Increase enforcement of Primary Seat Belt Law for Adolescents (17 and Under)
- Increase DWI patrols
- Increase enforcement of existing laws - with regards to reckless driving
- Enforcement (Seat Belts) of existing and proposed primary seat belt laws
- Combine aggressive driver enforcement details
- Strengthen graduated drivers licensing law

Engineering

- Appropriate use of edge-line and centerline rumble strips – establish a plan of where they are appropriate
- Better location identification (EMS) - Support better location identification (mileage markers) to improve EMS response to crashes
- Invest in low cost road modifications to roadways (for elderly drivers)
- Maintain roadside clear of hazardous trees and objects
- Develop ITS/Technology solutions for rural applications

Emergency Medical

- Prevent additional injuries at motor vehicle crash -support education of EMS providers to prevent additional injuries at crash sites
- Increase access to EMS for users of New Hampshire's roads and highways by increasing the availability of communication (cell phone)

Data

- Strengthen Traffic Record Coordinating Committee (TRCC) – Done
- Conduct a NHTSA high-level deficiency evaluation of NH traffic record systems – Done
- Enhance traffic crash data collection items: DMV Traffic Accident Report, Form DSMV-159, DSMV-160, and DSMV-161 – Working on - #
- Conduct traffic record assessment (NHTSA)
- Continue support for the development and implementation of the Crash Record Management System (CRMS) project and planned phases – Working on
- Link crash and medical outcome data sets to develop an integrated data system to facilitate population-based outcome measurements, geographic comparisons, trend analysis, and research
- Begin analysis of partial data sets for incorporation into commonly prepared plans, studies, and outreach materials
- Develop and conduct crash data collection training
- Develop a centralized traffic record data repository (traffic record data warehouse)
- Develop a mechanism to provide public access to known crash locations in viewer's town or in the State utilizing existing on-line mapping and report tools
- Legislative safety data outreach program
- Establish dedicate funding for safety initiatives

Progress on Strategies for 2008

Data Strategies

- *Strengthen Traffic Record Coordinating Committee*

  Target: Secure approval of the Traffic Records Executive Committee (TREC) to appoint identified staff to serve on the TRCC. The TRCC membership has been expanded to include individuals currently serving on the SHSP data emphasis work group.

  Activity/Accomplishment: The Traffic Record Coordinating Committee (TRCC) strengthened its ability to provide direction on all matters related to the State's traffic record systems by establishing a TRCC charter with clear objectives, mission and goals, and a Memorandum Of Understanding (MOA) between the participating Departments and Agencies. (See Appendix A) The Committee established co-chairs to strengthen its leadership and management. The New Hampshire Highway Safety Agency and Department of Transportation are current co-chairs of the committee.

  Measure of performance: TRCC completed the Section 408 funds year one grant proposal by June 15th, 2007. $300,000 was received from this grant and used for improvements to the Crash Record Management System.

- *Conduct a NHTSA high-level deficiency evaluation of NH traffic record systems*

  Targets: A high-level deficiency evaluation of New Hampshire's traffic record systems: crash, roadway, vehicle, driver, enforcement and adjudication, and injury surveillance. The evaluation identifies data items, data collection responsibility, data ownership, data storage, and data quality, which include timeliness, consistency, completeness, accuracy, accessibility, and data integration.

  Activity/Accomplishment: The Department of Transportation, NH Highway Safety Agency, and National Highway Traffic Safety Administration in collaboration conducted a high-level deficiency evaluation of NH traffic record systems providing the State a deficiency analysis and performance goal matrix. The TRCC is using this matrix to guide the direction and coordination of the State's traffic safety systems. (See Appendix B for a portion of the Report).

  Measure of performance:
  1) Complete a one-day traffic record evaluation workshop to identify traffic records deficiencies.
  2) Improve/Correct three of the identified data deficiencies in any of the 6 traffic records systems: crash, roadway, vehicle, driver, enforcement and adjudication, and injury surveillance by 2010.

- *Enhance traffic crash data collection items: DMV Traffic Accident Report, Form DSMV-159, DSMV-160, and DSMV-161*

  Target: A comprehensive review of traffic crash data items focusing on user's data needs and compliance with national standards for items on the NHDOS, Division of Motor Vehicles traffic accident report, form DSMV-159, DSMV-160, and DSMV –161.

  Activity/Accomplishment: The State's traffic crash report (forms DSMV-159, DSMV-160, and DSMV-161) were enhanced to meet national guidelines (Model Minimum Uniform Crash Criteria), meet user needs, and better integrate with other safety systems. The Research Computing Center @ the University of New Hampshire contracted with Ledge Light Technology to facilitate a working group to develop a new crash reporting form (See appendix C), as part of their Crash reporting Management System (CRMS) contract with the Department of Transportation. The TRCC established a working group comprised of Department of Transportation, Department of Safety (State Police and Division of Motor Vehicle), NH Highway safety Agency, Department of Health and Human Services, Administrative Office of the Courts NH Insurance Agency, and NH Association of Chiefs of Police to provide input for the new crash form.

  Measure of Performance: Increase the number of locatable crashes using GIS tools from 40% to 50% by the year 2009 and to 75% by the year 2012.

- *Conduct traffic record assessment (NHTSA)*

  Targets: An in-depth formal review of New Hampshire's safety data and traffic records systems.

  Activity/Accomplishment: The Department of Transportation contracted with Ledge Light Technology to conduct a traffic records assessment. The scope of this assessment covered all of the components of a traffic records system. The purpose was to determine whether the State of New Hampshire's traffic records system is capable of supporting management's needs to identify the state's highway safety problems, to manage the countermeasures applied to reduce or eliminate those problems, and to evaluate those programs for their effectiveness. The TRCC is using this assessment to guide the direction and coordination of the State's traffic safety systems.

  Measure of performance: Increase the number of crash data items that meet national compliance, Model Minimum of Uniform Crash Criteria (MMUCC) guidelines from 50% to 75% by the year 2009.

- *Continue support for the development and implementation of the Crash Record Management System (CRMS) project and planned phases*

  Target: The CRMS targets State and local law enforcement and government agencies need for efficient crash data capture, data exchange, data storage, and reporting processes.

  Activity/Accomplishment: The Research Computing Center (RCC) @ the University of New Hampshire and the NH Department of Information Technology (DoIT) are working to complete Phase I, technical hardware and software implementation, by the end of October 2008. RCC is working hand-in-hand with DoIT to migrate the CRMS application from the University's development environment to the State's testing environment. Phase II, enhancements and statewide implementation, will integrate the Department of Safety's safety management systems (VISION & MAPP) with CRMS to streamline data capture, ensure data integrity, and expand safety analysis and reporting.

  Measure of Performance: Implementation of the Crash Record Management System

  1) Implementation of the Crash Record Management System to all State law enforcement by 2009.
     Increase local law enforcement's electronic crash data submittal from 0% to 50% by 2010 and to 90% by 2012.

Next Steps for this functional area

- Complete the crash data capture and build a safety data warehouse to integrate with all of the safety systems.

Engineering Strategies

- *Appropriate use of edge-line and centerline rumble strips – establish a plan of where they are appropriate*

  Target: All of New Hampshire's highway users.

  Activity/Accomplishment: We prepared a guideline for the installation of Milled Rumble Strips on NH Highways and distributed it to the Department Bureau and Consultant community. This document is intended to provide designers and contract administrators guidance in the placement of rumble strips. The plan sheets with the details of the rumble strip dimensions and locations will be added to the rewrite of the Highway Design Manual.

  Measure of Performance: Reduce the lane departure type crashes. Documentation of the edge-line and centerline rumble strip locations and evaluation of the rumble strip segments for their effectiveness. Goal is to reduce

lane departure crashes in areas we are aware of a high incidence by 25% and around the state by 5% by 2012.

Next Steps for this functional area

- *Better location identification to improve emergency response to crashes. This coming year we will concentrate on the NHS system, and look into installing mile markers.*

- *Invest in low cost road modifications with an emphasis on the elderly driver, consideration of adding left turn lanes when appropriate, or installing flashing beacons.*

Education /Outreach Strategies

- *Pass a primary seat belt law.*

  Target: A seat belt law would be intended to include all drivers and vehicle occupants in New Hampshire, with the exception of people riding in exempted vehicles (for example, vehicles for hire, school buses over 10,000 pounds, vehicles manufactured without seat belts) and those with a health condition that contraindicates it.

  Activity/Accomplishment: This was defeated in the legislature and a legislative committee was created to prepare a report on the seat belt issue. A report was completed August 20, 2008. The Seat Belt Commission (formally the Commission to recommend a comprehensive program for increasing the use of passenger restraints in New Hampshire) made the following recommendations in the Final Report:

  A majority of the Commission recommended:
  • That a primary seat belt law be enacted
  • That an adequately funded, consistent, long-term commitment to public education must be an essential component of any effort to increase seat belt use whether or not an adult seat belt law is passed

  The education component should include a focus on the link between seat belt use and safety (lives saved and injuries reduced) as well as existing laws.
  A comprehensive approach including legislation, education and enforcement should achieve a significant increase in seat belt usage resulting in a reduction in motor vehicle fatalities, serious injuries and the associated costs.
  The Commission recognized that any seat belt legislation raises the issue of the balance between individual rights and public safety. The minority of the Commission believed that the cost to individual rights outweighed the increase in public safety.

  Performance Measure: Monitoring the number of unbelted fatalities and percent usage of seat belts. Goal is to increase seat belt usage to 83% by 2010.

- *The Driver Education Programs of New Hampshire Departments of Education and Safety have updated the State's Driver Education Scope of Services, Safe C3100. They have done this along with the New Hampshire Driver Education Teachers' Association. Education support and expansion of existing education programs involving wearing seat belts particularly for young drivers and pick-up truck drivers.*

  Target: All New Hampshire with a special emphasis on groups with the lowest usage rate: young drivers (16 –39) and pick-up truck drivers.

  Activity/Accomplishment: The Injury Prevention Center funded by the NH Highway Safety Agency facilitated a program in the Newport area targeting pick-up truck drivers, including adolescents. A project was done at the Newport Middle High School rewarding students for wearing seatbelts using incentive items. Pre and post seatbelt survey revealed an increase in the number of students wearing seatbelts. This project is going to continue during the next year with an increase in the number of towns to be determined.

  Performance Measure:
  Increase seat belt use in targeted groups to 83% by 2010.

- *Increase communities engaging in enforcement and education on adolescent seat belt use.*

  Target: Communities in New Hampshire where adolescents live, go to school, and play.

  Implementation:
  - Facilitate workshops in communities showing them how to increase their adolescents' seatbelt use according to best practice
  - Work with communities across the state on special projects to increase seat belt use according to best practice.

  Activity/Accomplishment:
  The New Hampshire Teen Driving Committee (NHTDC) is a group of professionals from around the state, all involved in traffic safety. All members are committed to reducing the risk of adolescents being involved in a motor vehicle crash as well as reducing the severity of injuries and fatalities when a motor vehicle crash does occur.

  The NHTDC uses the NH Strategic Highway Safety Plans as a guide for its actions.

  The NHTDC meets on the third Monday of every month at 1:00 pm at 29 Hazen Drive in Concord. The membership, includes, but is not limited to, representation from the following agencies:

- The Department of Health and Human Services, Division of Public Health Services, Injury Prevention, Adolescent Health, and Alcohol and Other Drug Prevention Programs.
- The Department of Safety, Division of Motor Vehicles, Driver Education
- The Department of Education, Driver Education
- The Department of Transportation
- The NH Highway Safety Agency
- The Brain Injury Association of New Hampshire
- Injury Prevention Center at Children's Hospital at Dartmouth
- Levering Family Foundation

In all of their members work, increased collaboration between local law enforcement and adolescents are encouraged.

The Teen Driving Committee put on a training session at White Mountains Regional High School in Whitefield with staff from the Children's Safety Network. They presented on "Best Practices in Increasing Teen Seat Belt Use" with two student groups from Whitefield and Gorham. The Children's Safety Network also presented at the 2007 Traffic Safety Conference sponsored by the Highway Safety Agency. Both presentations encouraged education partnered with law enforcement to increase adolescent seat belt use.

The Highway Safety Agency contracts with federal dollars with the Dover Police Department to put on their annual "Seat Belt Challenge". This high school competition challenges students in the driver's seat, passenger seat, and both rear outboard seats to change positions and buckle up as fast as they can. Interspersed are questions related to traffic safety.

The Brain Injury Association is working with funding by the Cox Foundation at five New Hampshire high schools, Laconia, Lebanon, Concord, Portsmouth and Nashua North. This program utilizes existing student groups to design programs for their peers on traffic safety.

The Injury Prevention Center is teaming up with the Levering Family Foundation in Federal Fiscal Year 09 to present at 15 New Hampshire high schools utilizing the video "Room To Live". This video and the presentation will focus on increasing seat belt usage. The presentations are partly sponsored by the New Hampshire Highway Safety Agency.

The New Hampshire Buckle Up Coalition is made up of agencies, particularly law enforcement, whose mission is to increase seat belt use in the state. The Coalition will be sponsoring (through NH Highway Safety federal funds) their annual Traffic Safety Conference in the spring of 2009.

Measure of Performance:

- In the 2007 Youth Risk Behavior Survey, 11.7% of the students participated answered yes to "Never or rarely wore a seatbelt when riding in a car driven

by someone else". This has steadily improved from 1993, when 27.6% answered yes to the question to 2007 when only 11.7% did. The trend is a linear change, which means the behavior of not/rarely wearing seatbelts in a car driven by someone else is going down over time.

- According to the 2008, NH Highway Safety Agency belt observation study, adolescent drivers have increased seat belt usage from 51.6% in 2006 to 54.5% in 2008. Males and female adolescent drivers still differ with males buckling up 50.9% and females 60.0%. Both males and females increased their belt rate from the 2007 percentages.
- In New Hampshire Fiscal Year 08, first responder (TEMSIS) reports (not inclusive of the entire state) indicated safety equipment use in 51.8% of the total amount of children (19 or less) who were involved in a motor vehicle crash.
- Using discharge data and vital records for children 17 and under, there has been no significant difference in deaths caused by motor vehicle crashes between 2005 and the five-year average of 2001-2005. However, inpatient hospitalizations for 15-17 year olds as a result of motor vehicle crashes has significantly increased over the last five years. This contrasts with the significant decrease of emergency department visits for 15-17 year olds as a result of motor vehicle crashes.
- According to the 2006 Fatal Accident Reporting System, there were 17.3 fatalities per 100,000 people in the age group due to motor vehicle crashes among 16-20 year olds. In 2004, the rate was 28.86 per 100,000 and in 2005 the rate was 20.75 per 100,000.

Next steps:
Increase coordination of all of the programs through the Teen Driving Committee.

- *Strengthen graduated drivers licensing law*.

  Target: New adolescent drivers and their parents/caregivers.

  Implementation:
  - Establish an adolescent driving Legislative task force, perhaps as a subcommittee of the New Hampshire Teen Driving Committee.
  - Work with Legislators in the 2008-2009 Legislative session to introduce a bill amending New Hampshire's current graduated driver licensing system.
  - After the bill passes, the adolescent driving Legislative task force will work with law enforcement, driver education instructors, parents, and adolescents to increase awareness of the law, as well as enforcement.
  - Implementation of a beginner's permit. This would ensure that young drivers, before they get behind the wheel would be tested on signs, rules and regulations, and their records would be checked to ensure that they do not have anything in their past that would make them ineligible for a license. It would also require they pass an eye exam.

Activity/Accomplishment:
Legislation was introduced in the 2007-2008 session establishing a beginner's permit and amending the current graduated driver licensing system. This bill, while it passed the House, it was voted interim study by the Senate Transportation and Interstate Cooperation Committee.

Next steps:
The NHTDC will follow up on the interim study of the bill. Through members, they will keep abreast of any LSR that is submitted for the 2008-2009 legislative session on graduated licensing.

- *Increase parental involvement in graduated drivers licensing and training*

  Target: Parents/caregivers of new adolescent drivers.

  Implementation:
  - Collaboratively design a statewide media campaign to inform parents about the graduated driver licensing system and new adolescent drivers.
  - Involve parent advocates in the push for a revised graduated driver licensing system, as it relates to best practice, in all of the ways stated previously.
  - Encourage programs, which support the use of a written agreement between parents and their new adolescent drivers.
  - Advocate for a parent night requirement in the State's Driver Education Scope of Services, Safe C 3100.
  - Develop and provide a NH publication for parents of young people, to be issued to parents at the time of issuance of a beginner's permit, outlining GDL and related responsibilities, driver information, and rules of the road. (example – Oregon would allow NH to adopt and adapt their Parent Guide to Teen Driving which is now also used with necessary changes in Washington State)

  Activity/Accomplishment and Next Steps:

  The Drivers Education Programs of the New Hampshire Departments of Education and Safety have updated the State's Driver Education Scope of Services, Safe C 3100. They have done this along with the New Hampshire Driver Education Teachers' Association. Part of the update is a mandated parent night requirement. The updates are in the approval process.

  Both the Department of Education and the Department of Safety Driver Education Programs are collaborating on a revision to the curriculum for instructors of drivers' education in the state. They have been facilitating training sessions across the state utilizing a cd/web based curriculum made specific to New Hampshire. This curriculum is based on one utilized in Oregon. Amongst other things, it emphasizes parental involvement.

The NHTDC is working with its members on a proposal for a large scale communications campaign geared towards parents on teen driving in New Hampshire and the graduated licensing system here. The proposal will be given to the Department of Transportation to potentially fund out of its 10% flexibility in the Highway Safety Improvement Plan funds. The proposal centers on a three pronged approached to involving parents in the graduated drivers licensing system. The first piece would center on a website designed in conjunction with the Brain Injury Association of New Hampshire and the Department of Safety. The website would focus on parents of teen drivers and the elements of the NH graduated drivers licensing system. The second would be a hardcopy brochure capturing the theme and words of the website for parents. The third prong would be a media campaign, again taking the concepts of the website and brochure and bringing them to statewide media outlets. Evaluation would be incorporated in all aspects of the project. This will include, but not limited to a survey designed to measure parental support of graduated driver licensing and understanding of limitations it sets. All members of the NHTDC would work on the project. The Brain Injury Association would be the fiscal agent.

- *Make Advanced Skills Training and Drivers' Attitudinal Courses Accessible to All Adolescents*

  Target: All adolescent drivers, especially those that are novice.

  Implementation:
  - Identify places where adolescents can receive advanced skills and approved driver attitude training.
  - Work with those places to ensure that all New Hampshire adolescents are able to access this training.

  Activity/Accomplishment:
  The Levering Family Foundation continues to work with Stevens Driving School in offering all New Hampshire students a discount on their advanced skills training classes. All members of the student groups the Brain Injury Association has been working with have also been offered classes gratis. The New Hampshire Traffic Safety Institute has teamed up with the Stevens Driving School to offer a one day advanced skills and drivers' attitudinal courses (utilizing the Alive at 25 Program). The Safety and Health Council of Northern New England has begun offering a train the trainers for the Alive at 25 program, a post drivers education course in attitudinal improvement. This course was originally started in Colorado by the Colorado State Patrol Family Foundation.

Next Steps:
The NHTDC will continue to look for funding for additional students to attend both the advanced driving and attitudinal courses.

Enforcement Strategies

- *Increase Enforcement of Primary Seat Belt Law For Adolescents 17 and Under*

  Target: Adolescent drivers and passengers.

  Implementation:
  - Increase incentives both statewide and in those communities where seat belt usage is low, so that the law enforcement community can adequately target those adolescents in violation of the primary seat belt law for those ages 17 and under.
  - Tailor the enforcement to adolescents (as stated previously).

  Activity/Accomplishment:
  Funded by the New Hampshire Highway Safety Agency, 20 local and county police departments in addition to the state police participated in "Join the Click" in 2008. This program, available to all police departments statewide, is for added, direct enforcement of the state's child passenger safety laws (including seat belt use for teens under 18). Increase incentives both statewide and in those communities where seat belt usage is low, so that the law enforcement community can adequately target those adolescents in violation of the primary seat belt law for those ages 17 and under.

  Performance Measures:
  - In the 2007 Youth Risk Behavior Survey, 11.7% of the students participated answered yes to "Never or rarely wore a seatbelt when riding in a car driven by someone else". This has steadily gone up from 1993, when 27.6% answered yes to the question to 2007 when only 11.7% did. The trend is a linear change, which means the behavior of not/rarely wearing seatbelts in a car driven by someone else is going down over time.
  - According to the 2008, NH Highway Safety Agency belt observation study, adolescent drivers have increased in belt usage from 51.6% in 2006 to 54.5% in 2008. Males and female adolescent drivers still differ with males buckling up 50.9% and females 60.0%. Both males and females increased their belt rate from the 2007 percentages.
  - In New Hampshire Fiscal Year 08, first responder (TEMSIS) reports (not inclusive of the entire state) indicated safety equipment use in 51.8% of the total amount of children (19 or less) who were involved in a motor vehicle crash.
  - Using discharge data and vital records for children 17 and under, there has been no significant difference in deaths caused by motor vehicle crashes between 2005 and the five-year average of 2001-2005. However, inpatient hospitalizations for 15-17 year olds as a result of motor vehicle crashes has significantly increased over the last five years. This contrasts with the

significant decrease of emergency department visits for 15-17 year olds as a result of motor vehicle crashes.

- According to the 2006 Fatal Accident Reporting System, there were 17.3 fatalities per 100,000 people in the age group due to motor vehicle crashes among 16-20 year olds. In 2004, the rate was 28.86 per 100,000 and in 2005 the rate was 20.75 per 100,000.

Next steps:

Find ways to increase the number of police departments that participate in the "Join the Click" program.

Work on the following strategies:

- *Increase DWI Patrols*

This will require an increase in overtime and needs statistical information. It is Highway Safety Funded.

- *Increase enforcement of existing laws with regards to reckless driving*

There will be a need to move around details to continue. Could develop mandated programs for youth. Would need to go through Administrative Rules. Target flagrant reckless driving (>85 MPH) or come up with a bench mark speed.

- *Combine aggressive driver enforcement details.*

Possible use of unmarked cars. Take 5 troopers for aggressive driving teams. Possibly combine efforts with state and local agencies.

Appendix A

Traffic Records Coordinating Committee Documentation

State Department/Agency	Traffic Records Executive Committee (TREC)	Traffic Records Coordinating Committee (TRCC)	Email Address
NH Highway Safety Agency	**Peter M. Thomson, Coordinator** **pthomson@nhhsa.state.nh.us**	**Debra H. Garvin (co-chair)** **James Ryan, NHTSA/NER** **Mario Damiata, NHTSA/NER**	**dgarvin@nhhsa.state.nh.us** **jamesc.ryan@dot.gov** **mario.damiata@nhtsa.dot.gov**
NH Department of Safety	**John Barthelmes, Commissioner (appointed April 2007)**	**Earl M. Sweeney** **Kevin O'Brien** **Virginia C. Beecher** **Col. Frederick H. Booth** **Peter Hastings (IT)** **Claire Janelle (IT)** **Roberta Bourque (FARS)** **Bonita Goudreau (Financial Resp.)** **Thomas Hettinger** **Lt. Mark Liebl (SP)** **Susan Prentiss (FST/EMS)**	**esweeney@safety.state.nh.us** **kobrien2safety.state.nh.us** **vbeecher@safety.state.nh.us** **fbooth@safety.state.nh.us** **peter.hastings@oit.nh.gov** **Claire.Janelle@oit.nh.gov** **rbourque@safety.state.nh.us** **bgoudreau@safety.state.nh.us** **thettinger@safety.state.nh.us** **mliebl@safety.state.nh.us** **sprentiss@safety.state.nh.us**
State Department/Agency	Traffic Records Executive Committee (TREC)	Traffic Records Coordinating Committee (TRCC)	Email Address
NH Department of Safety		**Michael Schnyder** **Lt. Nathan Boothby (Highway Patrol)** **Sgt. John P. Begin (Highway Patrol)**	**mschnyder@safety.state.nh.us** **nboothby@safety.state.nh.us** **jbegin@safety.state.nh.us**

		Larry Abruzzesa (FMCSA) **Susan Pickard (IT)**	**larry.abruzzesa@dot.gov** **Susan.Pickard@oit.nh.gov**
NH Department of Transportation	**Charles O'Leary, Commissioner**	**Jeff Brillhart** **Lyle Knowlton** **William Lambert** **Glenn Davison (co-chair)** **Craig Green** **Steven Dubois** **Dane Prescott (IT)** **Mary Kulacz (IT)** **William Oldenburg** **Subramanian Sharma** **William Watson** **Marty Calawa (FHWA)**	dbrillhart@dot.state.nh.us lknowlton@dot.state.nh.us wlambert@dot.state.nh.us gdavison@dot.state.nh.us cgreen@dot.state.nh.us sdubois@dot.state.nh.us dane.prescott@oit.nh.gov mary.kulacz@oit.nh.gov woldenburg@dot.state.nh.us ssharma@dot.state.nh.us bwatson@dot.state.nh.us martin.calawa@fhwa.dot.gov
State Department/Agency	Traffic Records Executive Committee (TREC)	Traffic Records Coordinating Committee (TRCC)	Email Address
NH Department of Health & Human Services	**Commissioner Nicholas A. Toumpas** ntoumpas@dhhs.state.nh.us	**Geoffrey Souther** **David Reichel**	gsouther@dhhs.state.nh.us dreichel@dhhs.state.nh.us
Administrative Office of the Courts	**Donald D. Goodnow, Director** dgoodnow@courts.state.nh.us	**Gary Fowler**	gfowler@courts.state.nh.us
NH Insurance Department	**Commissioner Roger A. Sevigny** Roger.sevigny@ins.nh.gov	**Gail Matson**	gail.matson@ins.nh.gov
NH Association of Chiefs of Police	**Chief James S. Valiquet, President** jimvaliquet@tds.net	**Chief Kevin Cyr, Newmarket PD** **Chief David DuBois, Rochester PD**	kcyr@newmarketnh.gov david.dubois@rochesternh.net

Copy of TRCC Charter

OBJECTIVE

To create an inter-agency, inter-governmental Traffic Records Task Force composed of agencies involved in highway safety for the purpose of providing direction on all matters related to the State of New Hampshire's Traffic Records System with the mission to reduce traffic crashes and the resulting deaths, injuries, and the severity of injury related to road trauma.

The two-tier Task Force is established with membership from the:

NH Highway Safety Agency
NH Department of Safety
NH Department of Transportation
NH Department of Health & Human Services
Administrative Office of the Courts
NH Insurance Department
NH Association of Chiefs of Police

The Task Force will include the Traffic Records Executive Committee (TREC) comprised of department heads who will provide policy, strategic oversight, and support of recommendations (subject to appropriations) and the Traffic Records Coordinating Committee (TRCC) comprised of professional and technical staff from the various departments including data collectors, data systems managers, and data users with the technical expertise to look at the following data systems: Crash, Roadway, Vehicle, Driver, Enforcement, and Adjudication.

MISSION AND GOAL

Traffic records data for all agencies represented on the Traffic Records Task Force is integral to the completion of their shared mission to reduce traffic crashes and the resulting deaths, injuries, and the severity of injury related to road trauma. Therefore, the Task Force will promote the effective use of information technology in support of the highway safety goals and objectives of the State of New Hampshire and will play a major role in insuring that the statewide traffic records system implementation is successfully completed. The Task Force will adopt a comprehensive view of the data required to make the business of highway safety work, develop information systems and business processes that promote the sharing of highway safety data among all agencies involved, and support

data improvements that eliminate duplication, improve uniformity, promote electronic data collection, and facilitate data access and use. This will result in the accurate, complete, and timely collection of traffic safety data that can be analyzed and made available for decision making among the appropriate partners.

MEMORANDUM OF UNDERSTANDING

The Traffic Records Coordinating Committee will meet on a monthly or quarterly basis as determined by the Committee.

The responsibilities of the TRCC will include, but not be limited to:

- Providing coordination and oversight responsibilities including development, review, and approval of the State's Traffic Records Strategic Plan that will identify deficiencies, prioritize corrective actions, and serve as a guide for the most cost-effective use of available funding resources that will result in improved data accuracy, reliability, timeliness, integration, and accessibility;

- Providing administrative and technical guidance;

- Facilitating communications and cooperation between and among the member organizations and agencies represented on the committee;

- Establishing goals for improving the Traffic Records Systems;

- Developing recommended procedures to assist localities and State agencies that are users and/or providers of the Traffic Records Systems in understanding and accepting their mutual responsibilities and interdependence;

- Recommending upgrades to reporting forms and formats and procedures to gather, maintain, and disseminate crash records/traffic records information;

- Reviewing laws and dealing with traffic records for consistency and for conformity with modern technology;

- Reviewing the need for legislation to facilitate the development and operation of the Traffic Records Systems;

- Fostering the development of new technologies for reporting, processing, storing, and using data at both the local and state levels;

- Reviewing and recommending requirements for file linkage;
- Stimulating the creation and maintenance of a coordinated comprehensive statewide Traffic Records System that provides adequate data in an efficient, cost effective, and timely manner;
- Continuously developing cooperation and support from local and state agencies, as well as from the private sector; and
- Providing continuing evaluation for the Traffic Records Systems.

With administrative support provided by the NH Highway Safety Agency and based on a majority vote of the TRCC members, the State's Traffic Records Systems Strategic Plan will be presented to the TREC for approval and will be implemented by the member agencies and organizations, subject to appropriations and regulations.

TRCC Committee Assignments

TRAFFIC CRASH SYSTEMS	**Glenn Davison, Chairman** **Marty Calawa** **Chief Kevin Cry** **Lt. Nathan Boothby** **Steve Dubois** **Roberta Bourque** **Bill Oldenburg** **Bruce Holmes**
TRAFFIC CITATIONS & ADJUDICATION	**Tom Hettinger, Chairman** **Chief David DuBois** **Lt. Mark Liebl** **Lt. Nathan Boothby** **Gary Fowler** **Bonnie Goudreau**
EMS/INJURY SURVEILLANCE	**Sue Prentiss, Co-Chair** **Fred von Recklinghausen, Co-Chair** **Jim Ryan** **Deb Garvin** **Gail Matson** **David Reichel**
DRIVER LICENSING & HISTORY SYSTEM	**Bonnie Goudreau, Chair** **Roberta Bourque** **Mary Kulacz**
VEHICLE REGISTRATION	**Claire Janelle** **Peter Hastings** **Susan Pickard**
ROADWAY INVENTORY	**Marty Calawa, Chair** **Bill Oldenburg** **Glenn Davison** **Subramanian Sharma** **Steve Dubois** **Bill Lambert**

TRCC Certification

The New Hampshire Traffic Records Coordinating Committee was established ten years ago and continues to operate and function as the organization responsible for the planning and implementation of state traffic safety data system improvements.

The TRCC members voted and approved the Strategic Plan along with the projects selected for the 2nd year of funding under the "Section 408 Program" on April 18, 2008.

_____

Peter M. Thompson
Highway Safety Agency

Appendix B

Deficiency Analysis & Performance Goals
(Portion of the Document Only)

DEFICIENCY ANALYSIS & PERFORMANCE GOALS

TRAFFIC CRASH SYSTEMS
TRAFFIC CITATIONS & ADJUDICATION
EMS/INJURY SURVEILLANCE
DRIVER LICENSING & HISTORY
VEHICLE REGISTRATION
ROADWAY INVENTORY

SYSTEM: CRASH

The foundation of safety analysis is the crash file. Other highway safety and traffic record files linked to the crash file help identify highway safety needs by targeting Engineering, Education, Enforcement, and Emergency Medical Services, commonly known as the Es. The crash file contains data on the time, location, environment, and circumstances of a crash. It identifies the vehicles, drivers, cyclists, occupants, and pedestrians involved, and it documents the crash consequences (fatalities, injuries, property damage, and violations charged). In addition to providing information on a particular crash, the crash file gives a total number of fatalities, injuries, and property damage crashes, which can be further categorized, for example, by age groups, locations, or time periods. Details on the various data elements currently collected are included in the latest edition of NHTSA's State Accident Report Forms Catalogue. The NHTSA publication, Fatal Accident Reporting System (FARS), contains annual data reported by each state.

Status

The New Hampshire Department of Safety (NHDOS) stores the Crash files on a relational database, along with Driver License, Driver History, Plea by Mail, Violations and Suspensions, Hearings, Insurance Information and Vehicle Registration. The Fatal Accident Reporting System (FARS) unit is contained within the DOS/DMV.

The vast majority of the crashes on the NHDOS crash files are reported on the State of New Hampshire Uniform Police Traffic Accident Report, form DSMV-159 (Revised 1/91). Motor Carrier Traffic Crash reports use form DSMV-16. The timeframe between collecting the crash information at the scene and submitting the accident report to the DMV varies among law enforcement agencies. Report submittals vary from weekly to monthly, quarterly, or longer. The DMV reports accident report submittals take an average of 69 calendar days to reach them. The DMV manually enters the accident reports into a relational database. This process can take 1 to 48 days depending on workload and available staff with an average of 14 calendar days.

Approximately 240 police agencies submit crash reports. The New Hampshire State Police submit approximately 30% of the reports and the remaining 70% by local police agencies. It is not necessary for a motorist to submit an accident report (SR-22) to the Department of Safety if a police agency has investigated and submitted a report.

New Hampshire Department of Safety (NHDOS) submits crash record files on data tapes to the New Hampshire Department of Transportation (NHDOT) for GIS analysis, which provides roadway location, roadway characteristics, and roadway classification of the crash site. NHDOT staff indicate that only about 53% of the records can be located to the roadways due to incomplete or incorrect nodal information.

The current crash data collection process is predominately a manual process, which is time-consuming and neither completely captures all crash data needed nor fully complies with national standards. Crash data validations do not include electronic checks for correctness or completeness.

The State of New Hampshire is developing a Crash Record Management System (CRMS). This project is the collaboration of efforts among the NHDOT, NHDOS, Resource Computing Center (RCC) @ UNH, and other agencies to lead a multi-phase initiative to introduce new technologies to provide increased functionality and to expedite crash data capture, exchange, storage, and reporting. The objective is to improve the safety of highways by reducing injuries and fatalities through the efficient, timely, and

streamlined capturing of crash data and sharing of the information among all concerned parties for effective analysis and reporting. CRMS Training for state and local police agencies will coincide with implementation. Police agencies with existing Crash Management Systems can submit their data electronically to NHDOS using a defined data format. The CRMS project had its' kick-off meeting August 2006. The RCC @ UNH staff is working with the NH Office of Information Technology (OIT) on the system design and technical design documentation and started developing essential components. Spring 2008 is the schedule completion data.

DEFICIENCY ANALYSIS & PERFORMANCE GOAL MATRIX

Timeliness:

Summary: The current crash data collection process is time-consuming and largely manual process. The data is manually collected and paper copies are submitted to NHDOS for manual entry into a relational database. The crash data is transferred to NHDOT by data tapes.

Deficiency: Crash data collection takes too long from the event in the field until DMV receives the submittals and the data is entered into their database.

Performance Measure	Benchmark	2007	2008	2009	2010
Number of days from crash event to submittal	69 days				20 days

Performance Measure	Benchmark	2007	2008	2009	2010
Number of days from submittal to data entry	14 days				10 days

Accuracy

Summary: No Deficiencies

Deficiency:

Performance Measure	Benchmark	2007	2008	2009	2010

Completeness

a) Summary: The DMV receives numerous commercial motor vehicle reports that have incorrect data or missing information.

Deficiency: Reduce number of missing commercial vehicle crash reports attached to the PAR.

Performance Measure	Benchmark	2007	2008	2009	2010
Number of missing commercial crash report	10% submitted				90%

b) Summary: The current Police Accident Report (PAR) has limited refresher training opportunities and access to documentation.

Deficiencies: The PAR is not being completed with consistency among law enforcement agencies and officers.

Performance Measure	Benchmark	2007	2008	2009	2010
Number of law enforcement Officers attending refresher training on completing PAR	0%			75%	

c) Summary: The DMV receives numerous Police Accident Reports (PARs) that have incorrect data or missing location referencing information.

Deficiency: Reduce number of missing or incorrect location reference data in the PARS .

Performance Measure	Benchmark	2007	2008	2009	2010
Percent of missing or incorrect location data	53%			25%	

Uniformity

a) Summary: The current Police Accident Report (PAR) data needs to be evaluated for current user needs and comply with the MMUCC national standards.

Deficiencies: Current PAR data does not meet all of NH's needs and is not fully complying with national standards (MMUCC).

a) Performance Measure	Benchmark	2007	2008	2009	2010
Number of Elements MMUCC compliant	77%		90%		

b) Performance Measure	Benchmark	2007	2008	2009	2010
Number of Attributes MMUCC compliant	48%		80%		

Integration

Summary: No deficiencies

Deficiencies

Performance Measure	Benchmark	2007	2008	2009	2010

Accessibility

Summary: Crash data is stored at the DMV and a subset is shared with NHDOT for GIS processing and highway safety analysis. The data is shared on mainframe computer data tapes, transferred manually to NHDOT, and converted to PC based text files.

Deficiencies: Crash data is not easily accessible electronically to NHDOT and other state and local agencies for safety analysis.

Performance Measure	Benchmark	2007	2008	2009	2010
Number of days between NHDOT crash data request to creation of PC text files	5-10 business days				2 days

Appendix C

Traffic Crash Report

Case Number

Amendment

STATE OF NEW HAMPSHIRE
UNIFORM POLICE
TRAFFIC CRASH REPORT

DSMV 159 (Rev. 7/08)

☐ Non-Reportable

☐ Hit & Run

Crash Date	Crash Time (24:00)	City or Town Name
Police Notified Date: Time:	Police Arrived Date: Time:	Reporting Agency Name (Department/ ORI)

Collison Occurred: _____ ☐ Miles ☐ Feet ☐ At Intersection ☐ At Address ☐ N ☐ E ☐ S ☐ W

Route # And/Or Street Name

Intersecting Road, Bridge, Town Line (Not Telephone Pole, House)

OF _____

Route # And/Or Street Name

Posted Speed ☐ Unk ☐ N/A

Location

1st Node _____ Dist. From 1st Node Toward 2nd Node _____ ☐ Miles ☐ Feet 2nd Node _____

or

Feet _____ ☐ N ☐ E ☐ S ☐ W From Mile Marker _____

or

Latitude:

Longitude:

Unit No: _____ Information

☐ Non-Motorist ☐ Summoned ☐ Arrested
RSA: _____ ☐ M.V.R. Recom

(Operator) Last Name	First	M.I.	DOB

Address (# Street Name)	City/Town

State	Zip	Primary Phone	Secondary Phone

Driver's License #	State	Class

Same as Operator ☐ (Owner) Last Name First M.I.

Address (# Street Name)	City/Town

State	Zip	Primary Phone	Secondary Phone

Insurance Company Name	☐ No Ins.	Insurance Policy Number	☐ DSMV 385

Hit And Run
☐ Y, Driver and/or Car left Scene ☐ N ☐ Unknown

Veh Plate #	Plate Type	State	Trailer Plate #	State

Make	Year	Model	Haz Mat Placard? ☐ Y ☐ N

VIN

Veh Travel Direction ☐ NB ☐ SB ☐ WB ☐ EB ☐ Not on Roadway ☐ Unknown

Vehicle Towed? ☐ Y ☐ N	Towing Co. Name	Towed To

Unit No: _____ Information

☐ Non-Motorist ☐ Summoned ☐ Arrested
RSA: _____ ☐ M.V.R. Recom

(Operator) Last Name	First	M.I.	DOB

Address (# Street Name)	City/Town

State	Zip	Primary Phone	Secondary Phone

Driver's License #	State	Class

Same as Operator ☐ (Owner) Last Name First M.I.

Address (# Street Name)	City/Town

State	Zip	Primary Phone	Secondary Phone

Insurance Company Name	☐ No Ins.	Insurance Policy Number	☐ DSMV 385

Hit And Run
☐ Y, Driver and/or Car left Scene ☐ N ☐ Unknown

Veh Plate #	Plate Type	State	Trailer Plate #	State

Make	Year	Model	Haz Mat Placard? ☐ Y ☐ N

VIN

Veh Travel Direction ☐ NB ☐ SB ☐ WB ☐ EB ☐ Not on Roadway ☐ Unknown

Vehicle Towed? ☐ Y ☐ N	Towing Co. Name	Towed To

Officer Name (Print)	Emp Id	Date of Report	Reviewed By:

Case Number

STATE OF NEW HAMPSHIRE UNIFORM POLICE TRAFFIC CRASH REPORT

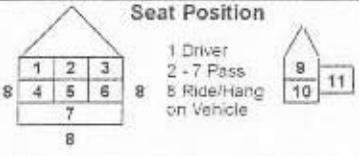
Sheet of Sheet(s)

Unit ID (Unit #)

Person Type
1 Driver 4 Bicyclist 7 Other Ped. (Wheelchair, Person in Building, Skater, 9 Occ. of a Non-Motor Veh Transportation Device
2 Passenger 5 Other Cyclist Ped. Conveyance, etc.) 10 Unknown Type of Non-Motorist
3 Pedestrian 6 Witness 8 Occ. of Motor Veh, Not in Transport (Parked, etc.) 99 Unknown

Sex
M Male
F Female
99 Unk

Seat Position



1 Driver
2 - 7 Pass
8 Ride/Hang on Vehicle
9 Driver (2/3 Wheeled Veh)
10 Pass (2/3 Wheeled Veh)
11 Sidecar/ Sled/ Hang on Veh
99 Unk

Air Bag Deployed
1 No 5 Curtain
2 Front 6 Combo
3 Side 7 Disabled
4 Other 33 N/A
99 Unk

Ejected
1 No
2 Partially
3 Totally
33 N/A
99 Unk

Protection System
1 Shoulder & Lap
2 None Used
3 Shoulder Only
4 Lap Only
5 Type Unknown
6 Child Frwd Facing
7 Child - Rear Facing
8 Booster Seat
9 Child - Unk
10 Helmet Used (DOT)
11 No Helmet
12 Other
33 N/A

Injury
1 No Injury
2 Complains of Pain
3 Non-Incapacitating
4 Incapacitating
5 Fatal
99 Unknown

Transport
1 Not Transported
2 EMS Ground
3 EMS Air
4 Law Enforcement
5 Other
99 Unknown

Unit ID	Name: Occupants - Witnesses - Pedestrians - Bicyclists	Pers Type	Sex	Seat Pos.	Air Bag	Eject	Prot. Sys.	Injury	Trans	EMS/Medical Facility
	DOB									EMS
	Address (# Street Name) Phone									Med Fac
	DOB									EMS
	Address (# Street Name) Phone									Med Fac
	DOB									EMS
	Address (# Street Name) Phone									Med Fac
	DOB									EMS
	Address (# Street Name) Phone									Med Fac
	DOB									EMS
	Address (# Street Name) Phone									Med Fac
	DOB									EMS
	Address (# Street Name) Phone									Med Fac

Non-Vehicle Property Damage ☐ State Property ☐ City/Town Property ☐ Private Property ☐ N/A

Owner | Address

Primary Phone | Secondary Phone | Damage Description

Non-Vehicle Property Damage ☐ State Property ☐ City/Town Property ☐ Private Property ☐ N/A

Owner | Address

Primary Phone | Secondary Phone | Damage Description

Case Number

STATE OF NEW HAMPSHIRE UNIFORM POLICE TRAFFIC CRASH REPORT CODING GUIDE

Sheet of Sheet(s)

Type of Roadway
1 Two-Way, Not Divided (No Median or Barrier)
2 Two-Way, Not Divided With a Continuous Left Turn Lane
3 Two-Way, Divided, Unobstructed Median
4 Two-Way, Divided, Obstructed Median
5 One-Way Trafficway
6 Driveway or Access Way
7 Parking Lot
99 Unknown

Road Surface Condition (Prevailing)
1 Dry
2 Wet
3 Snow
4 Slush
5 Ice/ Frost
6 Water (Standing, Moving)
7 Sand
8 Mud, Dirt, Gravel
9 Oil
10 Other
99 Unknown

Light Condition (Prevailing)
1 Daylight
2 Dawn
3 Dusk
4 Dark - Lighted
5 Dark - Not Lighted
6 Dark - Unknown Lighting
7 Other
99 Unknown

Weather Condition (Prevailing)
1 Clear
2 Cloudy
3 Fog, Smog, Smoke
4 Rain
5 Sleet, Hail (Freezing Rain or Drizzle)
6 Snow
7 Blowing Snow
8 Severe Crosswinds
9 Blowing Sand, Soil, Dirt
10 Other
99 Unknown

Manner of Impact
1 Not a Collision Between Two Motor Vehicles in Operation
2 Rear End (Front-to-Rear)
3 Head-On (Front-to-Front)
4 Angle
5 Sideswipe, Same Direction
6 Sideswipe, Opposite Direction
7 Rear-to-Side
8 Rear-to-Rear
9 Other
99 Unknown

Type of Intersection
1 Not at Intersection
2 Four-Way Intersection
3 T-Intersection
4 Y-Intersection
5 Traffic Circle
6 Roundabout
7 Five-Point, or More
99 Unknown

Location of 1st Harmful Event
1 On Roadway
2 Shoulder
3 Median
4 Roadside
5 Gore
6 Separator
7 In Parking Lane or Zone
8 Off Roadway, Location Unknown
9 Outside Right-of-Way (Trafficway)
99 Unknown

School Bus Related Crash?
(Directly Involved Indicates Contact was Made)

☐ Yes, Directly Involved ☐ No
☐ Yes, Indirectly Involved

Traffic Controls
1 No Controls
2 Person
3 Traffic Control Signal
4 Flashing Traffic Control Sig.
5 School Zone Sign/ Device
6 Stop Sign
7 Yield Sign
8 Warning Sign
9 Railway Crossing Device
10 No Passing Zone
11 Lane Control
12 Other
99 Unknown

Traffic Controls Working Properly?

☐ Yes ☐ No ☐ N/A

Was the Crash in or near Construction, Maintenance or Utility Workzone?

☐ Yes ☐ No **If Yes, then answer below:**

Location of the Crash:
1 Before the First Work Zone Warning Sign
2 Advance Warning Area
3 Transition Area
4 Activity Area
5 Termination Area

Type of Work Zone:
1 Lane Closure
2 Lane Shift/Crossover
3 Work on Shoulder or Median
4 Intermittent or Moving Work
5 Other

Construction Workers Present? ☐ Yes, with Law Enforcement ☐ Yes, without Law Enforcement ☐ No

Contributing Circumstances Environment
(Choose at least one)
1st, 2nd, 3rd
1 None
2 Weather Conditions
3 Physical Obstructions
4 Glare
5 Animal(s) in Roadway
6 Other
99 Unknown

Contributing Circumstances Road
(Choose at least one)
1st, 2nd, 3rd
1 None
2 Road Surface Condition (Wet, Icy, Snow, Slush, etc.)
3 Debris
4 Rut, Holes, Bumps
5 Work Zones (Construction/ Maintenance/ Utility)
6 Worn, Travel-Polished Surface
7 Obstruction in Roadway
8 Traffic Control Device Inoperative, Missing or Obscured
9 Shoulders (None, Low, Soft, High)
10 Non-Highway Work
11 Other
99 Unknown

Road Alignment

Horizontal Alignment:
1 Straight 2 Curve

Grade:
1 Level 2 Hillcrest 3 Hill 4 Sag (Bottom)

Case Number

STATE OF NEW HAMPSHIRE UNIFORM POLICE TRAFFIC CRASH REPORT
CODING GUIDE

Vehicle # _____ Vehicle # _____

Unit Types

1 Passenger Car	7 Motor Home	13 Motorcycle	18 Pedestrian
2 (Sport) Utility Vehicle	8 School Bus	14 Moped	19 Bicyclist
3 Passenger Van	9 Transit Bus	15 Low Speed Vehicle (>20 <25 mph)	20 Witness
4 Cargo Van (10K lbs [4,536 kg] or Less)	10 Motor Coach	16 Other Light Trucks (10K lbs [4,536 kg] or Less)	21 Pocket Bike
5 Pickup	11 Other Bus	17 Medium/ Heavy Trucks (More than 10K lbs [4,536 kg])	22 Other
6 ATV	12 Motorized Skateboard		

Vehicle Action Prior to Crash

1 Movements Essentially Straight Ahead	6 Turning Left	11 Negotiating a Curve
2 Backing	7 Making U-Turn	12 Parked
3 Changing Lanes	8 Leaving Traffic Lane	13 Stopped in Traffic
4 Overtaking/ Passing	9 Entering Traffic Lane	14 Other
5 Turning Right	10 Slowing	99 Unknown

Non-Collision:

1 Overturn/ Rollover
2 Fire/ Explosion
3 Immersion
4 Jackknife
5 Cargo/ Equip. Loss or Shift
6 Fell/ Jumped from Motor Veh.
7 Thrown or Falling Object
8 Other Non-Collision

Collision with:

Person, Motor Veh. or Non-Fixed Object

9 Pedestrian
10 Pedalcycle
11 Railway Vehicle (Train, Engine)
12 Animal (Deer)
13 Animal (Moose)
14 Animal (Turkey)
15 Animal (Black Bear)
16 Animal (Other)
17 Motor Vehicle in Transport
18 Work Zone/ Maintenance Equip.
19 Other Non-Fixed Object

Fixed Object

20 Impact Attenuator/ Crash Cushion	32 Tree (Standing)
21 Bridge Overhead Structure	33 Equip. Fail. (Blown Tire, Brake Fail.)
22 Bridge Pier or Support	34 Utility Pole(Elec/Tele)/ Light Support
23 Bridge Rail	35 Highway Lighting/ Light Standard
24 Culvert	36 Traffic Sign/ Support
25 Curb	37 Traffic Signal/ Support
26 Ditch	38 Separation of Units
27 Embankment	39 Other Post, Pole, or Support
28 Guardrail Face	40 Fence
29 Guardrail End	41 Mailbox
30 Concrete Traffic Barrier	42 Other Fixed Obj. (Wall, Tunnel, etc.)
31 Other Traffic Barrier	

99 Unknown

1st 2nd 3rd 4th (Choose at least one) **Sequence of Events** (Choose at least one) 1st 2nd 3rd 4th

(Select from the above List)

First Harmful Event
(Select from the above List)

Most Harmful Event
(Select from the above List)

Extent of Damage

1 No Damage Observed 2 Minor Damage (Cosmetic) 3 Functional Damage (Moderate) 4 Disabling Damage 99 Unknown

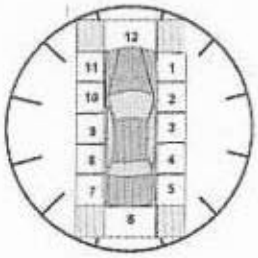
Case Number

STATE OF NEW HAMPSHIRE UNIFORM POLICE TRAFFIC CRASH REPORT CODING GUIDE

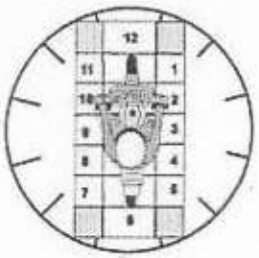
Vehicle #

Initial Impact Area
Clock Diagram
Or
13 Top (Roof)
14 Undercarriage
15 Non-Collision
99 Unknown

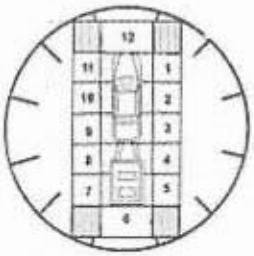
Most Damaged Area



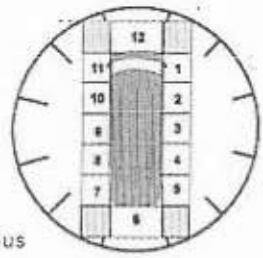
Passenger Car



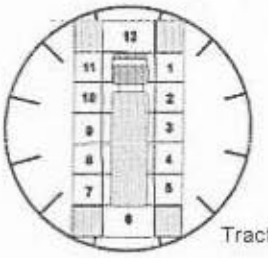
Motorcycle



Passenger Car W/Trailer



Bus



Tractor Trailer

Vehicle #

Initial Impact Area
Clock Diagram
Or
13 Top (Roof)
14 Undercarriage
15 Non-Collision
99 Unknown

Most Damaged Area

Vehicle Removal

1 Towed due to Vehicle Damage
2 Towed due to reasons other than Vehicle Damage
3 Remained at Scene
4 Driven from Scene

Special Function Vehicle

1 No Special Function
2 Taxi
3 Vehicle Used as School Bus
4 Vehicle Used as Other Bus
5 Military
6 Police
7 Ambulance
8 Fire Truck
99 Unknown

Condition at time of Crash

1 Apparently Normal
2 Physically Impaired
3 Emotional (Depressed, Angry, Disturbed, etc.)
4 Illness
5 Fatigued
6 Asleep
7 Under the Influence
8 Taking Medication
9 Had Been Drinking
10 Had Been Using Illegal Drugs

Alcohol and/or Drug Testing

Driver Vehicle #		Chemical Test	Driver Vehicle #	
Alcohol	Drug		Alcohol	Drug
☐	☐	Test Not Given	☐	☐
☐	☐	Test Refused	☐	☐
☐	☐	Blood	☐	☐
☐	☐	Urine	☐	☐
☐	☐	Other	☐	☐
☐		Breath	☐	

Driver Vehicle #	Alcohol Test Result	Driver Vehicle #
☐	Value	☐
☐	Pending	☐

Driver Vehicle #	Drug Test Result	Driver Vehicle #
☐	Positive	☐
☐	Negative	☐
☐	Pending	☐

Case Number

STATE OF NEW HAMPSHIRE UNIFORM POLICE TRAFFIC CRASH REPORT CODING GUIDE

_____ Vehicle #

Vehicle # _____

Driver Distracted

1 Not Distracted
2 Electronic Communication Devices
3 Other Electronic Devices
4 Other Inside the Vehicle
5 Other Outside the Vehicle
99 Unknown

Driver Actions at Time of Crash

(Choose at Least One)

1st / 2nd

1 No Improper Driving
2 Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway, etc.
3 Failed to Yield Right-of-Way
4 Disregarded Traffic Sign
5 Ran Red Light
6 Disregarded Other Road Markings
7 Exceeded Posted Speed Limit
8 Drove Too Fast for Conditions
9 Improper Turn
10 Improper Backing
11 Improper Passing
12 Improper Stopping
13 Wrong Side or Wrong Way
14 Followed Too Closely
15 Failed to Keep in Proper Lane
16 Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner
17 Ran Off Road
18 Over-Correcting/ Over-Steering
19 Other Improper Action
99 Unknown

☐ Yes ☐ No — **Does this Vehicle have Seats to Transport 9 or more people including the Driver's Seat?** — ☐ Yes ☐ No

Non-Motorist Actions/Circumstances at Time of the Crash

(Choose at Least One)

1st / 2nd

1 Walking/Cycling to/from School
2 Cycling
3 Crossing Roadway
4 Waiting to Cross Roadway
5 Dart/Dash into Roadway
6 Walking/Cycling along Roadway with Traffic (In/ Adjacent to Travel Lane)
7 Walking/Cycling along Roadway against Traffic (In/Adjacent to Travel Lane)
8 Walking/Cycling on Sidewalk
9 In Roadway Improperly (Standing, Lying, Working, Playing)
10 Disabled Vehicle Related (Working on, Pushing, Leaving/ Approaching)
11 Failure to Yield Right-of-Way
12 Failure to Obey Traffic Signs, Signals, or Officer
13 Inattentive (Talking, Eating, etc.)
14 Not Visible (Dark Clothing, No Lighting, etc.)
15 Improper Turn/ Merge
16 Improper Passing
17 Wrong-way Riding
18 Other
33 N/A
99 Unknown

Non-Motorist Safety Equipment

(Choose at least one)

1st / 2nd

1 None
2 Helmet
3 Protective Pads Used (Elbows, Knees, Shins, etc.)
4 Reflective Clothing (Jacket, Backpack, etc.)
5 Lighting
6 Other
33 N/A
99 Unknown

Non-Motorist Location at Time of Crash

1 Marked Crosswalk - Intersection
2 Unmarked Crosswalk - Intersection
3 Marked Crosswalk - Mid-block
4 In Roadway - Intersection (Not at Crosswalk)
5 In Roadway - Mid-block (Not at Crosswalk)
6 Sidewalk
7 Driveway Crossing
8 Median or Island
9 Paved Shoulder
10 Unpaved Shoulder/ Roadside
11 Bicycle Lane
12 Shared-Use Path or Trails
13 Non-Roadway Area (Parking Lot, Driveway, etc.)
14 Other
33 N/A
99 Unknown

Case Number

STATE OF NEW HAMPSHIRE UNIFORM POLICE TRAFFIC CRASH REPORT

Diagram

Crash Sketch

Indicate North

By Arrow

Gist

Case Number	STATE OF NEW HAMPSHIRE UNIFORM POLICE SUPPLEMENTAL TRAFFIC CRASH REPORT	
Amendment	DSMV 159 (Rev. 11/07)	

Appendix D

Executive Summary of Traffic Records Assessment

Executive Summary

The scope of this assessment covered all of the components of a traffic records system. The purpose was to determine whether State of New Hampshire's traffic records system is capable of supporting management's needs to identify the state's highway safety problems, to manage the countermeasures applied to reduce or eliminate those problems, and to evaluate those programs for their effectiveness.

The Assessment team noted many efforts which are performed throughout the state in the areas of traffic safety and traffic records. It is not the intent of this report to thoroughly document all the ongoing initiatives and/or all the successes, nor to acknowledge the individuals at all levels for their dedication to traffic safety. The Traffic Records Assessment focuses on areas which need improvement and the report should not be viewed as criticism. The assessment is an attempt to provide assistance to all areas of traffic records for improvement.

The Traffic Records System assessment reveals three critical issues that plague the State of New Hampshire traffic safety program:

1. The Traffic Record Systems (Crash, Citation/Adjudication, Roadway, Vehicle, Driver, Injury Surveillance (EMS) – The audit identified numerous problems with the timeliness, accuracy, completeness, uniformity, integration, and compatibility of data in the existing systems. It is mostly paper driven.

2. Data Access – The audit found that access to data across these systems to be generally tedious, difficult, limited, or non-existent. Lack of access restricts the development of efficient and effective highway safety program.

3. Highway Safety Program Management and Coordination – The audit found that one of the major problems with the state traffic records system is lack of coordinated efforts between agencies, divisions, and departments involved in highway safety. A process that is improving.

The following are some of the key findings and recommendations for the state's traffic records System.

Crash Records System

Crashes are investigated by law enforcement officers and reports (about 36,000 annually) are forwarded to the Department of Safety, Division of Motor Vehicles. Even though some departments (Manchester PD) submit Crash Reports in PDF format via email, typically within 3 days, the rest of the departments throughout the state are predominantly paper; submitted in batch

form via U.S. Mail with average submission days ranging from a year to 96 days.

The existing paper driven process is untimely, incomplete, and lacks data validation which significantly impacts the NHDOT's ability to create highway safety roadway improvements programs that are data driven. Crash data are extracted for NHDOT from the DOS main frame system upon request. There is no direct access to other Traffic Records Systems, limited data quality control process, and the existing crash report form does not fully conform to any standard (e.g., MMUCC or ANSI D16).

There is no statute that requires law enforcement agencies to investigate motor vehicle crashes. The statute (RSA 264/26) only specifies the submission of investigated report within 5 days after investigation is completed. Other state statute (RSA 264/25) regarding crash reporting requires motorist to submit crash report within 15 days of completion (for financial responsibility since the state do not have a compulsory vehicle insurance law); reports which are not processed by DOS. The DOS crash report file cannot be relied upon as representing the state's entire crash experience because some of the local law enforcement agencies are not investigating motor vehicle crashes or reporting to the state.

The state currently has on-going projects that will address some of the above short comings of the existing manual processes. A multi-electronic crash data collection system that is MMUCC compliant and includes local RMS data export capabilities, as well as a data warehouse, is planned for development. The new system is scheduled for field testing in February of 2009. In addition, the system will have data quality control built-in that will measure timeliness, completeness, and accuracy using eXtensible Stylesheet Language (XSL) and XML Schema Definition (XSD) for data edits and validation. The State of New Hampshire Electronic Crash Reporting System is expected to be fully deployed and in use by the end of 2009.

Recommendations

1. Continue the development of the Crash Reporting Management System (CRMS) for field testing and full deployment by end of 2009.

2. Institute the use of the system by all Law Enforcement Officers in the state.

3. Develop a training manual and law enforcement officer training in the use of the Electronic Crash Reporting System. Include instruction on the value of the data importance to highway safety management.

4. Ensure data compatibility with other traffic records system (Driver & Vehicle system, E-Citation, etc.) being developed.

5. Create a crash location identification module that is based on the state roadway network for use in collecting crash location (convert the three location reference systems in the crash file to a single Global Positioning Satellite (GPS) coordinate system.

6. Link Blood Alcohol Concentration (BAC) files data to the Crash Repository.

7. Provide direct access to all involved in highway safety, most especially the Highway Safety Office and NHDOT.

8. Develop reports that identify major problem areas (e.g., Driving While Intoxicate/Under the Influence [DWI & DUI]) for public awareness.

9. Provide electronic upload files to federal data systems such as MCMIS/SafetyNet, Highway Performance Monitoring System (HPMS), and others.

10. Establish a formal data quality control process for crash reports to include measurements of timeliness, completeness, and accuracy.

Roadway System

The State of New Hampshire Department of Transportation (NHDOT) maintains the roadway network for the state. NHDOT has a Geographic Information System (GIS) and in the process of creating a new roadway inventory file that will include elements such as pavement type, pavement width, roadway geometry, drainage, pavement markings, traffic signs, guardrails, shoulder type and geometry, roadway appurtenances, etc. NHDOT is currently embarking on several initiatives to implement and upgrade the GIS that will provide the department with data analysis tools by which to locate crashes, identify highway safety problems, and develop effective countermeasures. Some of these initiatives are included in the State of New Hampshire Highway Safety Strategic Plan, which when implemented, will upgrade and improve the crash location data collection process.

Recommendations

11. Develop a centralized Roadway Information Management System to consolidate all existing roadway files that are individually maintained.

12. Continue to assess and adopt new technologies as appropriate to improve data collection, analysis, and dissemination.

13. Consider expanding and improving the use of hand-held devices for gathering roadway inventory data.

14. Establish and implement a roadway network system that will include all data sets required for evaluating high hazard locations by roadway intersection and sections, calculate statewide crash rates, and to develop hazard elimination program.

15. Develop and implement a single crash location referencing system.

16. Provide access to the roadway database on DOT network.

17. Establish a process for periodic updates to the roadway system.

18. Provide training to DOT personnel in the collection, use, and maintenance of the roadway information management system.

Driver and Vehicle Information

The State of New Hampshire, Department of Safety Division of Motor Vehicles is responsible for driver licensing and motor vehicle registrations in the state. There are approximately 1.4 million registered vehicles and 1.7 million licensed drivers in the state. All data related to the driver's license and driving history are maintained on the DOS mainframe computer in an IDMS database management system environment. The state incorporates into its database any adverse records (violations, convictions, suspensions, etc.) obtained through the NDR and the CDLIS. The state is a member of both the DLC and the Non-Resident Violators Compact (NRVC). The state enters out-of-state conviction records in compliance with the DLC and suspends drivers who fail to pay fines for out-of-state violations. However, while the scope of data is comprehensive, the processing is very labor intensive. Practically all data are keyed in from paper documents.

The Vehicle Registration File consists of registration data, both current and inactive registrations. The file can be queried by vehicle identification number (VIN), owner, type, and license plate number. Commercial and private passenger vehicles are registered for one year while government vehicles are registered for a period of five years.

The current system is paper driven with some automation. Driver and vehicle information are not accessible to other traffic records systems nor can they be easily linked for data analysis and reporting. Access to the files is limited to the Department of Safety and Law Enforcement agencies.

Recommendations

19. Institute the use of Bar Code for storing vehicle information on the vehicle registration to improve the accuracy of field data collection.

20. Encourage real-time data update for vehicle information (especially for the municipal agents that issues vehicle registration).

21. Ensure that the new system provides the ability to link information to other traffic records systems.

22. Institute the use of Bar Code for storing driver information on the driver license to improve the accuracy of field data collection.

23. Institute timely processing of suspension request from the court system.

24. Upgrade the license and driver history system to provide real time access to all system users.

Citation & Adjudication System

Citation and arrest data do not currently reside in a single database. Criminal arrest data (e.g., DWI arrests) reside in each of the District Court case management systems (CMS), and data for traffic citations (e.g., speeding violations) are maintained in the Traffic Bureau. The District Court CMSs are not interconnected with each other, nor are they connected with the Traffic Bureau. The Administrative of the Courts is deploying a new system that provides interconnectivity between District Courts and the Traffic Bureau. The Administrative of the Courts will be the custodial of a central database for all cases that are filed and processed in all District Courts and the Superior Courts.

The state does not currently control the distribution of the uniform citation form, nor does it keep track or account for citations and arrests. This is done by some local law enforcement agencies.

Recommendations

25. Investigate the use of the E-Citation application by law enforcement and conduct a proof of concept project.

26. Provide an electronic data collection tool (i.e., bar code reader) to take advantage of the new driver license 2-D bar code and to improve the quality of the data.

27. Create a real-time or near real-time data transmission from a citation issuance to disposition and store in a centralized repository.

28. Implement an electronic data transfer of E-Citation data from Law Enforcement Agencies to the District Courts.

29. Automate the update of driver file with disposition data by the court.

30. Design and implement a centralized statewide citation tracking system containing information about a citation from issuance to disposition. Each record in the system should contain information about all actions pertaining to that citation including the disposition.

31. Continue the J-One project to ensure the integration of all legacy systems containing data about violation, arrest, and dispositions with the court case management system in order to insure data sharing among district courts, superior court, supreme court, DMV, and other stakeholders.

Injury Surveillance System

The State of New Hampshire currently has all the key components needed for a comprehensive functional Injury Surveillance System (ISS). The Trauma and Emergency Medical Services Information System (TEMSIS) includes information about first responder and ambulance responses to crashes, including identification of the EMS Unit, care given, injury data, and the time the Emergency Medical Services unit was notified and arrived at the scene. TEMSIS has the capability to provide linkage directly to a trauma registry. TEMSIS, in full compliance with the National Emergency Medical Services Information System (NEMSIS) and can pre fill 30% to 40% of the National Trauma Database Standard (NTDS). The state is currently providing data to the national database. There is currently no centralized Trauma Registry System in the state.

Recommendations

32. Develop a trauma data dictionary that provides a solid format for consistent and data quality to establish a Centralized Trauma Registry in the state.

33. Institute a statewide Injury Surveillance program which links ISS data to other systems and continuously evaluates medical data for identifying potential problems areas and for developing highway safety countermeasures.

Traffic Records Coordinating Committee

The state has a TRCC with a membership that includes representatives from all the government offices with custodial responsibility for the various traffic records system components.

The TRCC performed adequately in the recent preparation of State of New Hampshire's Traffic Records Strategic Plan, and was able to obtain the approval of its executive committee. The TRCC needs to educate the people involved in traffic records data collection, use, and management at the agency

level, as well as the Executives in order to gain more cooperation and support. Periodic meetings of the Executive Level members need to take place (e.g. quarterly) to receive briefings on the status and progress of the projects in the Traffic Records System Strategic Plan.

Recommendations

34. The TRCC should take an active role in the development of highway safety policy for the state.

35. The TRCC should assume the oversight responsibility to assure that the traffic records system meets the needs of all agencies with a highway safety responsibility.

36. Develop and implement education and training programs to educate the public about traffic records data, what reports are available, and how to obtain them.

Strategic Planning

The Strategic Plan submitted by the State of New Hampshire TRCC represents a thoughtful effort considering the time and resource constraints under which it was prepared. Each project proposed addresses a specific Traffic Records System with plans to show measurable progress towards an established goal and performance measure.

Recommendations

37. Assign the TRCC the responsibility for updating the Traffic Records System Strategic Plan.

38. Create and maintain a Traffic Records System Strategic Plan with a scope of at least five years and with reviews for reassessment at least every two years.

Management Initiatives

39. Conduct a training needs assessment.

40. Promote training in the use of analytical tools for highway safety data analysis.

41. Extend training to all member agencies to provide a wide range of users with the information technology skills they need to manage transportation safety programs at all levels.

Other Information

42. Establish a Safety Data Warehouse that is the central repository of all highway safety data to enhance accessibility, analysis, linking, and usability by the safety community.

    - Utilize Geographic Information System (GIS) to support more thorough analyses of crash and other data sources.

44. Develop a disaster recovery plan for the Traffic Records System.

Appendix E

Rumble Strip Installation Guidelines

NEW HAMPSHIRE DOT
RUMBLE STRIP INSTALLATION GUIDELINES

The following are guidelines established for the use of milled rumble strips along New Hampshire roadways. Run off the road (ROR) crashes and head-on collisions due to fatigued, inattentive, or otherwise impaired drivers are a major contributor to New Hampshire's fatal and injury crashes. Milled shoulder rumble strips (SRS) and milled centerline rumble strips (CRS) provide low-cost safety solutions that alert drivers when they drift from their travel lane, providing an opportunity for the driver to maneuver their vehicle out of harms way. Another recognized benefit of shoulder rumble strips is that they alert pedestrians and bicyclists of possible danger from errant vehicles that leave the travel way and enter the shoulder area. Because of their proven benefits (NCHRP Synthesis Report #191 & #339), a project specific cost to benefit analysis will not be required.

General Design Guidelines for the Installation of Milled Rumble Strips on New Hampshire Highways

Milled Shoulder Rumble Strips (SRS) will be installed on all Interstate Highways, and similarly Limited Access divided highways to reduce the number of run off the road accidents due to driver inattention. Specific guidelines and details are included in this section.

- Other highways that may be considered for SRS installation:
  - Highway segments with a speed limit of 50 MPH or greater with Limited or Controlled Access
  - Highway segments with a minimum of 8' wide shoulders
  - Highway segments with an accident history of run off the road accidents that would warrant SRS consideration (Based on NH statewide average).
  - Highways with ADT greater than 1500 vpd
  - Any highways not meeting all of the above conditions will require an engineering analysis and Chief Engineer Approval.

Milled Centerline Rumble Strips (CRS) will not be standard practice on any Highway. CRS installation will only be considered on an individual project-by-project basis to reduce the number of crossing the centerline road accidents due to driver inattention. Specific guidelines and details are included in this section.

- As a minimum the following conditions will apply:
  - Highway segment has a speed limit of 50 MPH or greater with Limited or Controlled Access.
  - Highway segment should have a minimum of 4' wide shoulders
  - Highway segment has an accident history (crossing the centerline), greater than the NH statewide average.
  - ADT should be greater than 5000 vpd
  - Existing Pavement must be in good condition so that the installation of CRS will not cause future pavement delamination.
  - Minimum depth of the existing wearing course should be 1-1/4 inches
  - A public informational meeting will be held and concurrence from the local officials should be obtained.
  - Any highways that do not meet all of the above conditions will require an engineering analysis and Chief Engineer Approval.

Specific Design Guidelines for the Installation of Milled Rumble Strips on New Hampshire Highways

Installation procedures for Milled Shoulder Rumble Strips (SRS) on Interstate and similarly Limited Access divided highways:

Right Side Shoulders

- Depth shall be 1/2 inch
- Width shall be 16"
- Location shall be 30" from the outside of the edge line
- SRS shall not be installed on bridge decks.
- Terminate SRS 30' before at grade bridges and begin them 30' after. (This eliminates conflicts with at grade approach slabs.)
- Install SRS on fill over bridge structures

Ramp starting and stopping locations

Off ramps: Terminate SRS when the shoulder either gets narrower than 6' or at the beginning of the concrete nose

Mainline: Begin at concrete nose for off ramp
Terminate at end of concrete nose for on ramp

On ramps: Begin at end of the concrete nose as long as the shoulder is wider than 6' throughout the length of the acceleration lane

NOTE: At cloverleaf interchanges that have high volume and the acceleration lane is also the deceleration lane, consideration should be given to start the SRS 500' to 1000' beyond the off ramp nose

Note: If the ramp continues as a multi-lane roadway beyond the nose, consideration should be given during the design phase to extend SRS beyond the nose.

Left Side Shoulders (Median side)

- Depth shall be 1/2 inch
- Width shall be 16"
- Location shall be 6" from the outside of the edge line if shoulder width is 6' and less
- Location shall be 30" from the outside of the edge line if the shoulder width is greater than 6'

Median Crossovers (Starting and Stopping locations)

- When SRS are 30" off the edge line (shoulders greater than 6') terminate SRS 50' before and begin SRS 50' after.
- When the SRS are 6" off the edge line (shoulders 6' & less) terminate SRS 130' before and begin SRS 50' after.

Installation procedures for Milled Shoulder and Centerline Rumble Strips on NHS and other undivided 2-lane or 4-lane roadways:

Shoulder Rumble Strips (SRS)

- Depth shall be 3/8 inch
- Width shall be 12"
- Location shall be 12" from the outside of edge line

Intersections, drives and climbing lanes – starting and stopping locations

- If the highway has on and off ramps, terminate SRS at the edge line taper point

- Where right turn lanes exist – terminate at the beginning of the edge line taper of the turn lane
- Where no right turn lane exists - terminate SRS 300' before pavement radius of the side road
- Where no left turn lane exists (but many vehicles make this movement), terminate SRS 300' before the pavement radius of the side road.
- Begin SRS 150' after the radius of the side road
- At major commercial drives, use the guidelines noted above
- SRS will run by single resident & field driveways
- For truck climbing lanes, terminate SRS at the beginning of the edge line taper, unless the shoulder maintains a minimum width of 8'. Begin SRS when the edge line tapers back to normal and the shoulder has a minimum width of 8'.
- SRS will not be placed on segments of roadway that have more than 5 side roads and/or major commercial drives in a one-mile segment.

Note: Design should also take into consideration whether they should be installed in residential areas at all.

Signing

- Signing specifically related to the presence of SRS shall be included in all projects requiring the installation of SRS

Centerline Rumble Strips (CRS)

- Depth shall be 3/8 inch (passing zones included)
- Width shall be 12"
- Location shall be directly under the centerline

Intersections with no turn lanes or painted islands - starting and stopping locations

- Terminate CRS 25' before the end of the double yellow centerline
- Begin CRS 25' after start of the double yellow centerline

Intersections with raised islands - starting and stopping locations

- When approaching an island and at the point where the double yellow lines diverge, the CRS shall continue along the left double yellow line and terminate 25' before the end of the double yellow. If the double yellow becomes a single yellow terminate 25' before that point

Intersections with left turn lanes - starting and stopping locations

- Terminate CRS 25' before the end of the double yellow.
- Begin CRS 25' after the start of the double yellow.

Intersections with Painted Islands - starting and stopping locations

- At the point where the painted island starts (double yellow lines diverge), CRS shall only continue along the left double yellow line and terminate 25' before the end of the double yellow.

Signing

- Signing specifically related to the presence of CRS shall be included in all projects requiring the installation of CRS